

CLAIMS

1. A system (1) for processing configuration data of a communication network, characterized in that it includes first calculation means (3) adapted to determine a network usage predictive state from first data representative of the usage of resources and/or services within said network and second calculation means (4) adapted to determine a network evolution planning proposal from said usage predictive state and second data representative of plant (R_i , ER_i) of said network and said first calculation means (3) are adapted to determine usage profiles of service level agreements (7) between the operator of the network and customers from said first data and from said service level agreements.

2. A system according to claim 1, characterized in that said first calculation means (3) are adapted to determine said network usage predictive state from complementary third data representative of user requirement prediction information.

3. A system according to claim 1, characterized in that said first calculation means (3) are adapted to determine a service level agreement usage profile (7) for each service level agreement.

4. A system according to claim 1, characterized in that said first calculation means (3) are adapted to determine a service level agreement usage predictive profile constituting said network usage predictive state from said service level agreement usage profiles (7).

5. A system according to claim 1 in combination with claim 4, characterized in that said first calculation means (3) are adapted to determine said service level agreement usage predictive profile from said third data and said service level agreement usage profiles.

6. A system according to claim 1, characterized in that said first data is chosen in a group comprising the current usage of resources and/or services of the network and at least a portion of the record of usage of the resources and/or services of said network.

7. A system according to claim 5, characterized in that said first calculation means (3) are adapted to determine said service level agreement usage profiles (7) by means of a trend evolution analysis.

8. A system according to claim 1, characterized in that said third data is chosen in a group comprising the future types of service level agreements and the future evolution of service subscriptions.

9. A system according to claim 1, characterized in that said second calculation

means (4) include traffic engineering means (12) adapted to determine an optimum configuration of the network from said second data describing the plant (R_i , ER_i) of said network and a usage predictive state and predictive state validation means (11) adapted i) to supply said traffic engineering means (12) with said predictive state delivered by
 5 said first calculation means (3) and ii) on receiving an optimum configuration associated with said predictive state to determine whether said network can support said optimum configuration or not and then, if it cannot, to determine the network plant liable to be disturbed by the evolution of the network corresponding to said predictive state.

10 10. A system according to claim 9, characterized in that said second calculation means (4) include planning determination means (13) connected to a planning database (14) and adapted to determine said planning proposal from the designation of the disturbed plant and said planning data from said database.

15 11. A system according to claim 10, characterized in that said planning determination means (13) are adapted to deliver a planning proposal minimizing the costs of network evolution.

12. A system according to claim 10, characterized in that at least some of said planning data takes the form of planning rules.

20 13. A system according to claim 10, characterized in that said planning determination means (13) are adapted, before delivering said planning proposal, to supply said traffic engineering means (12) so that they determine a new optimum configuration corresponding to said network evolution planning proposal and said validation means (11) are adapted, on receiving a new optimum configuration associated with said planning proposal, to determine if said network, as defined by said planning proposal, can support said new optimum configuration or not and then, if it
 25 can, to send to said planning determination means (13) an authorization to deliver said planning proposal and, if it cannot, to determine the network plant liable to be disturbed by said planning proposal and to send to said planning determination means (13) the designation of said disturbed plant for them to determine a new planning proposal.

30 14. A system according to claim 1, characterized in that it includes a graphical user interface (5) adapted to enable the definition of said third data by an operator and the display of each planning proposal.

15. A system according to claim 13 in combination with claim 14, characterized in that said graphic user interface (5) is adapted to enable an operator to monitor the validation of planning proposals.

35 16. A system (2) for managing a communication network, characterized in that

it includes a processing system (1) according to any one of the preceding claims.

- 5 17. A method of processing communication network configuration data, characterized in that it consists in determining i) a network usage predictive state from first data representative of the usage of resources and/or services within said network and ii) a network evolution planning proposal from said usage predictive state and second data representative of plant (R_i , ER_i) of said network, and in that usage profiles of service level agreements (7) between the operator of the network and customers are determined from said first data and said service level agreements.

- 10 18. A method according to claim 17, characterized in that said network usage predictive state is determined from complementary third data representative of user requirement prediction information.

19. Use of a method, a processing system (1), and a management system (2) according to any one of the preceding claims in networks chosen in a group comprising Internet (IP), MPLS/GMPLS, ATM and Frame Relay networks.

ABSTRACT

A SYSTEM AND A METHOD FOR COMMUNICATION NETWORK CONFIGURATION PLANNING BY PREDICTING EVOLUTION

A system (1) dedicated to processing configuration data of a communication network includes first calculation means (3) adapted to determine a network usage predictive state from first data representative of the usage of resources and/or services within said network and second calculation means (4) adapted to determine a network evolution planning proposal from the usage predictive state and second data representative of plant (Ri) of the network.

(Figure 2)